

CLAIMS:

1 1. A method comprising:
2 transmitting a broadcast burst in a broadcast channel from a base station of a radio
3 communications system;
4 receiving a request burst from a user terminal;
5 transmitting a message burst from the base station to the user terminal from which the
6 request burst was received, the message burst including a description of the channels
7 available on the radio communications system for receiving messages from user
8 terminals.

1 2. The method of Claim 1, wherein the description of the available channels
2 includes an identification of traffic channels of the radio communications system.

1 3. The method of Claim 1, wherein the description of the available channels
2 includes an identification of random access channels of the radio communications
3 system.

1 4. The method of Claim 1, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 5. The method of Claim 4, wherein the request burst further includes an
2 indication of the power used by the user terminal to transmit the request burst and
3 wherein the indication of the transmit power to be used by the user terminal is based upon
4 the indication in the request.

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1 6. The method of Claim 1, wherein the request includes an identification of
2 the user terminal.

1 7. The method of Claim 1, wherein the configuration message further
2 includes an indication of the timing adjustment to be used by the user terminal in further
3 transmissions.

1 8. The method of Claim 1, wherein the broadcast burst has a specific
2 transmission time and the request burst is received with a specific timing relationship to
3 the broadcast message, the method further comprising using the timing relationship to
4 determine a base station to which the request burst is directed.

1 9. The method of Claim 1, wherein the message burst is sent with a specific
2 timing relationship to the request burst, the method further comprising using the timing
3 relationship to direct the message burst to the user terminal from which the request burst
4 was received.

1 10. The method of Claim 1, wherein the broadcast burst further includes a
2 code to identify the transmitting base station and wherein receiving a request burst
3 comprises demultiplexing the request burst from the base station identifying code.

1 11. The method of Claim 10, wherein the code to identify the transmitting
2 base station comprises a base station color code.

1 12. The method of Claim 1, wherein the broadcast burst includes a power
2 sequence that is related to the power used to transmit the broadcast burst.

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1 13. The method of Claim 1, wherein the broadcast burst includes a load
2 sequence that is related to the current traffic load at the base station.

1 14. The method of Claim 1, further comprising analyzing the spatial direction
2 from which the request burst is received and wherein transmitting the message burst
3 comprises transmitting the message burst spatially directed toward the user terminal
4 based on the spatial direction analysis.

1 15. The method of Claim 14, wherein analyzing the spatial direction
2 comprises determining direction of arrival parameters from the received message burst.

1 16. A machine-readable medium having stored thereon data representing
2 sequences of instructions which, when executed by a machine, cause the machine to
3 perform operations comprising:
4 transmitting a broadcast burst in a broadcast channel from a base station of a radio
5 communications system;
6 receiving a request burst from a user terminal;
7 transmitting a message burst from the base station to the user terminal from which the
8 request burst was received, the message burst including a description of the channels
9 available on the radio communications system for receiving messages from user
10 terminals.

1 17. The medium of Claim 16, wherein the description of the available
2 channels includes an identification of traffic channels of the radio communications
3 system.

1 18. The medium of Claim 16, wherein the description of the available
2 channels includes an identification of random access channels of the radio
3 communications system.

1 19. The medium of Claim 16, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 20. The medium of Claim 19, wherein the request burst further includes an
2 indication of the power used by the user terminal to transmit the request burst and
3 wherein the indication of the transmit power to be used by the user terminal is based upon
4 the indication in the request.

1 21. The medium of Claim 16, wherein the broadcast burst has a specific
2 transmission time and the request burst is received with a specific timing relationship to
3 the broadcast message, the instructions further causing the machine to perform operations
4 comprising using the timing relationship to determine a base station to which the request
5 burst is directed.

1 22. The medium of Claim 16, wherein the message burst is sent with a
2 specific timing relationship to the request burst, the instructions further causing the
3 machine to perform operations comprising using the timing relationship to direct the
4 message burst to the user terminal from which the request burst was received.

1 23. The medium of Claim 16, wherein the broadcast burst includes a load
2 sequence that is related to the current traffic load at the base station.

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1 24. The medium of Claim 16, the instructions further causing the machine to
2 perform operations comprising analyzing the spatial direction from which the request
3 burst is received and wherein the instructions for transmitting the message burst further
4 comprise instructions causing the machine to perform operations comprising transmitting
5 the message burst spatially directed toward the user terminal based on the spatial
6 direction analysis.

1 25. An apparatus comprising:
2 a transmitter of a base station of a radio communications system to transmit a
3 broadcast burst in a broadcast channel;
4 a receiver of the base station to receive a request burst from a user terminal;
5 a processor of the base station to assemble a message burst for transmission to the
6 user terminal from which the request burst was received, the message burst including a
7 description of the channels available on the radio communications system for receiving
8 messages from user terminals.

1 26. The apparatus of Claim 25, wherein the description of the available
2 channels includes an identification of traffic channels of the radio communications
3 system.

1 27. The apparatus of Claim 25, wherein the description of the available
2 channels includes an identification of random access channels of the radio
3 communications system.

1 28. The apparatus of Claim 25, wherein the request burst further includes an
2 indication of the power used by the user terminal to transmit the request burst and

wherein the the message burst includes an indication of the transmit power to be used by the user terminal based upon the indication in the request.

29. The apparatus of Claim 25, wherein the broadcast burst has a specific transmission time and the request burst is received with a specific timing relationship to the broadcast message, and wherein the processor uses the timing relationship to determine a base station to which the request burst is directed.

30. The apparatus of Claim 25, wherein the message burst is sent with a specific timing relationship to the request burst, to direct the message burst to the user terminal from which the request burst was received.

31. The apparatus of Claim 25, wherein the broadcast burst includes a load sequence that is related to the current traffic load at the base station.

32. The apparatus of Claim 25, further comprising a spatial processor to analyze the spatial direction from which the request burst is received and to transmit the message burst spatially directed toward the user terminal based on the spatial direction analysis.

33. An apparatus comprising:
means for transmitting a broadcast burst in a broadcast channel from a base station of a radio communications system;
means for receiving a request burst from a user terminal;
means for transmitting a message burst from the base station to the user terminal from which the request burst was received, the message burst including a description of the

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7 channels available on the radio communications system for receiving messages from user
8 terminals.

1 34. The apparatus of Claim 33, wherein the description of the available
2 channels includes an identification of traffic channels of the radio communications
3 system.

1 35. The apparatus of Claim 33, wherein the description of the available
2 channels includes an identification of random access channels of the radio
3 communications system.

1 36. The apparatus of Claim 33, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 37. The apparatus of Claim 33, wherein the message burst further includes an
2 indication of the timing adjustment to be used by the user terminal in further
3 transmissions.

1 38. The apparatus of Claim 33, wherein the broadcast burst has a specific
2 transmission time and the request burst is received with a specific timing relationship to
3 the broadcast message, the apparatus further comprising means for using the timing
4 relationship to determine a base station to which the request burst is directed.

1 39. The apparatus of Claim 33, wherein the message burst is sent with a
2 specific timing relationship to the request burst, the apparatus further comprising means
3 for using the timing relationship to direct the message burst to the user terminal from
4 which the request burst was received.

1 40. The apparatus of Claim 33, wherein the broadcast burst includes a load
2 sequence that is related to the current traffic load at the base station.

1 41. A method for requesting access on a wireless network comprising:
2 receiving a plurality of timing sequences on a broadcast channel from at least one
3 base station;
4 determining network timing using the received timing sequences;
5 using the network timing to determine a network access request transmission time;
6 transmitting a network access request at the determined time; and
7 receiving a message burst from a base station, the message burst including a
8 description of the channels available on the wireless network.

1 42. The method of Claim 16, wherein the description of the available channels
2 includes an identification of traffic channels of the radio communications system.

1 43. The method of Claim 16, wherein the description of the available channels
2 includes an identification of random access channels of the radio communications
3 system.

1 44. The method of Claim 16, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 45. The method of Claim 16, wherein the message burst further includes an
2 indication of the timing adjustment to be used by the user terminal in further
3 transmissions.

1 46. The method of Claim 16, wherein the timing sequences include a power
2 sequence that is related to the power used to transmit the timing sequence.

1 47. The method of Claim 21, wherein transmitting a request further comprises
2 transmitting a request with a power selected based on the recieved power sequence.

1 48. The method of Claim 16, wherein the timing sequences include a load
2 sequence that is related to the current traffic load at the base station.

1 49. The method of Claim 16, wherein the timing sequences are received from
2 a plurality of different base stations and wherein the method further comprises
3 distinguishing different base stations using the time at which different timing sequences
4 are received.

1 50. The method of Claim 16, wherein transmitting a request comprises
2 transmitting a request to a selected one of the plurality of different base stations by
3 transmitting the request at a time having a specific relationship to the time at which a
4 timing sequence is received from the selected base station.

1 51. The method of Claim 16, wherein the timing sequences are received with
2 at least one frequency and wherein the method further comprises using the received
3 timing sequences to determine a request transmission frequency based on the frequency
4 of the received timing sequences.

1 52. The method of Claim 16, further comprising receiving a base station
2 identifier on the broadcast channel and using the base station identifier to distinguish
3 broadcasts from different base stations on the same broadcast channel.

1 53. The method of Claim 16, wherein receiving a timing sequence further
2 comprises receiving an identification of the base station and wherein transmitting a
3 request further comprises transmitting the base station identification.

1 54. The method of Claim 28, wherein the code to identify the transmitting
2 base station comprises a base station color code.

1 55. The method of Claim 29, wherein transmitting a request comprises
2 multiplexing the request with the base station identifying code.

1 56. The method of Claim 16, wherein transmitting a request further comprises
2 transmitting an identifier of the transmitter.

1 57. A machine-readable medium having stored thereon data representing
2 sequences of instructions which, when executed by a machine, cause the machine to
3 perform operations comprising:

4 receiving a plurality of timing sequences on a broadcast channel of a wireless
5 network from at least one base station;

6 determining network timing using the received timing sequences;

7 using the network timing to determine a network access request transmission time;

8 transmitting a network access request at the determined time; and

9 receiving a message burst from a base station, the message burst including a

10 description of the channels available on the wireless network.

1 58. The medium of Claim 57, wherein the description of the available
2 channels includes an identification of traffic channels of the radio communications
3 system.

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1 59. The medium of Claim 57, wherein the description of the available
2 channels includes an identification of random access channels of the radio
3 communications system.

1 60. The medium of Claim 57, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 61. The medium of Claim 57, the instructions for transmitting a request
2 comprise further instructions causing the machine to perform operations comprising
3 transmitting a request with a power selected based on the recieved power sequence.

1 62. The medium of Claim 57, wherein the instructions for transmitting a
2 request comprise further instructions causing the machine to perform operations
3 comprising transmitting a request to a selected one of the plurality of different base
4 stations by transmitting the request at a time having a specific relationship to the time at
5 which a timing sequence is received from the selected base station.

1 63. The medium of Claim 57, wherein the instructions for transmitting a
2 request comprise further instructions causing the machine to perform operations
3 comprising multiplexing the request with a base station identifying code.

1 64. An apparatus for requesting access on a wireless network comprising:
2 means for receiving a plurality of timing sequences on a broadcast channel from at
3 least one base station;
4 means for determining network timing using the received timing sequences;
5 means for using the network timing to determine a network access request

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6 transmission time;
7 means for transmitting a network access request at the determined time; and
8 means for receiving a message burst from a base station, the message burst including
9 a description of the channels available on the wireless network.

1 65. The apparatus of Claim 64, wherein the description of the available
2 channels includes an identification of traffic channels of the radio communications
3 system.

1 66. The apparatus of Claim 64, wherein the description of the available
2 channels includes an identification of random access channels of the radio
3 communications system.

1 67. The apparatus of Claim 64, wherein the message burst further includes an
2 indication of the transmit power level to be used by the user terminal in further
3 transmissions.

1 68. The apparatus of Claim 64, wherein the means for transmitting a request
2 comprises means for transmitting a request to a selected one of the plurality of different
3 base stations by transmitting the request at a time having a specific relationship to the
4 time at which a timing sequence is received from the selected base station.